Description

USER INTERFACE METHOD AND APPARATUS FOR PROCESSING DISPLAYED OBJECTS

Technical Field

[1]   The present invention relates to a user interface method and apparatus for processing displayed objects and, more specifically, to a user interface method and apparatus wherein the user can select and execute his or her desired content more rapidly and efficiently by navigating grouped content lists.

Background Art

[2]   An EPG (Electronic Program Guide) currently used in a digital television is very similar in format to a broadcasting program table commonly in a newspaper, and thus, users can easily use the EPG. Generally, the EPG is constructed so as to allow a user to select a desired program using a 4-direction key mounted on a remote control device such as a remote controller. The 4-direction key is also used when the user searches for a plurality of picture lists in a display device controlled by the remote control device in order to see a specific picture or searches for a plurality of music files to listen to a specific music.

[3]   However, when searching for the list of contents using the 4-direction key in order to execute the contents such as a broadcasting program, image data, or audio data, the key can only be moved at an interval of one content, examples of which are illustrated in FIGS. 1 to 3.

[4]   FIG. 1 is a view showing the number of times of input by a direction key in order to execute a broadcasting program on an EPG in accordance with a conventional method.

[5]   When a user executes an EPG screen while watching a digital television, an EPG screen having such a structure as illustrated in FIG. 1 appears. At this time, it is assumed that, if assigned, 'program_1' is highlighted on an initial EPG screen as an initial state. When the user wishes to watch 'program_28', he has to move the highlight from the 'program_1' to the 'program_28' using the 4-direction key. That is, the user has to click a right direction key of the 4-direction key 2 times, and subsequently a down direction key 5 times. The user has to click the direction key totally 7 times, even though the user selects other paths to move from the 'program_1' to the 'program_28'.

[6]   FIG. 2 is a view showing the number of times of inputs by a direction key in order

to see a specific picture in a picture list in accordance with a conventional method.

[7]   In FIG. 2, if the user wishes to move from 'picture_1' to 'picture_12', the user has to click a right direction key of the 4-direction key 3 times, and a down direction key 2 times, in the same manner as in FIG. 1.

[8]   FIG. 3 is a view showing the number of times of input by a direction key in order to listen to a specific music from a music list in accordance with a conventional method.

[9]   Also in FIG. 3, in order to move from 'song_1.mp3' to 'song_10.mp3', the user has to click a down direction key of the direction key 9 times, in the same manner as shown in FIG. 1.

[10]   As a result, since the user moves by one content at a time using a 4-direction key even when searching for a quantity of contents, it takes much time to locate a specific content, thereby making it inconvenient to use.

Disclosure of Invention

[11]   Taking the above into consideration, the present invention provides a method for grouping a plurality of contents into a block so as to allow the contents to be moved in the unit of a block when searching for the contents using a direction key, and to allow a user to select and execute a desired content among the contents belonging to the block.

[12]   According to one exemplary aspect of the present invention, there is provided a user interface method for navigating displayed objects and selecting an objects among the objects, the method comprising: grouping a predetermined portion of selectable objects into a block; mapping the selectable objects to selection input keys of the user input device; and activating an object the selectable objects by the selection input key.

[13]   Preferably, the grouping step comprises a sub-step of grouping another portion of the selectable objects by movement input keys of the user input device.

[14]   Preferably, identifiers corresponding to the selection input keys are displayed on each of the selectable objects.

[15]   Preferably, the selection input keys comprise number buttons.

[16]   According to another aspect of the present invention, there is provided an apparatus for navigating displayed objects and selecting an object among the objects, , comprising: a display device; and a control device for grouping a predetermined portion of selectable objects into a block, mapping the selectable objects to selection input keys of the user input device, and activating an object among the selectable objects by the selection input key.

[17]   Preferably, the control device groups another portion of the selectable objects into a block by movement input keys of the user input device.

[18]   Preferably, identifiers corresponding to the selection input keys are displayed on each of the selectable objects.

[19]   Preferably, the selection input keys comprise number buttons.

Brief Description of Drawings

[20]   The above and other features and advantages of the present invention will become more apparent to those of ordinary skill in the art by describing in detail preferred embodiments thereof with reference to the attached drawings in which:

[21]   FIG. 1 is a view illustrating the number of times of input by a direction key in order to execute a broadcasting program on an EPG in accordance with a conventional method;

[22]   FIG. 2 is a view illustrating the number of times of input by a direction key in order to see a specific picture in a picture list in accordance with a conventional method;

[23]   FIG. 3 is a view illustrating the number of times of input by a direction key in order to listen to a specific music from a music list in accordance with a conventional method;

[24]   FIG. 4 is a flow chart showing a method for executing a content by navigating a content list in accordance with an exemplary embodiment of the present invention;

[25]   FIG. 5 is a view illustrating a user interface to navigate a content list in accordance with an exemplary embodiment of the present invention;

[26]   FIG. 6 is a view illustrating a user interface to allow a user to select a desired specific contents from a content list in accordance with an exemplary embodiment of the present invention;

[27]   FIG. 7 is a view illustrating the number of times of input by a key in order to perform a broadcasting program on an EPG in accordance with an exemplary embodiment of the present invention;

[28]   FIG. 8 is a view illustrating a user interface in accordance with a result of key input in FIG. 7;

[29]   FIG. 9 is a view illustrating the number of times of input by a key in order to see a specific picture in a picture list in accordance with an exemplary embodiment of the present invention;

[30]   FIG. 10 is a view illustrating a user interface in accordance with a result of key input in FIG. 9;

[31]   FIG. 11 is a view illustrating the number of times of input by a key in order to listen to a specific music in a music list in accordance with an exemplary embodiment of the present invention; and

[32]   FIG. 12 is a view illustrating a user interface in accordance with a result of key input in FIG. 11.

Best Mode for Carrying out the Invention

[33]   Hereinafter, a detailed explanation of a user interface apparatus and method for processing displayed objects in accordance with an exemplary embodiment of the present invention will be given with reference to the accompanying drawings.

[34]   FIG. 4 is a flow chart showing a method for executing a content by navigating a content list in accordance with an exemplary embodiment of the present invention.

[35]   In order to execute contents such as broadcasting program, picture, or music, the user executes a user interface which displays a list of the contents (S410). At this time, the user interface may be selected by a user or otherwise automatically executed from an apparatus executing the contents.

[36]   The user interface displays the content list comprising a plurality of contents, a part of which is grouped into a block. The contents belonging to the block are identified with identifiers with which the user can select a content among the contents. The identifiers preferably comprise Arabic numerals.

[37]   The user moves a block area by use of a key, e.g., a 4-direction key, until a desired content is included in the block area (S420). At this time, the movement is preferably done in the unit of a block area; however, the size of movement may vary under certain circumstances.

[38]   After finishing the navigation process to select a desired content, the user selects the desired content (S440). At this time, the selection can be performed by selecting a key corresponding to the identifier of the selected content. Where the identifier comprises an Arabic numeral, the user can use a number key of a remote control device such as a remote controller.

[39]   When the user selects the desired content, an apparatus for executing the content executes the selected contents (S440).

[40]   FIG. 5 is a view illustrating a user interface to navigate a content list in accordance with an exemplary embodiment of the present invention.

[41]   On an EPG screen shown in FIG. 5, 9 programs (program_1, program_2, program_3, program_6 program_7, program_8, program_11, program_12 and program_13) grouped into a block are displayed. At this time, if the user clicks a down

key of the 4-direction key, a whole block area is moved downward. Accordingly, other 9 programs (program_16, program_17, program_18, program_21, program_22, program_23, program_26, program_27 and program_28) are displayed as a block.

[42]   FIG. 6 is a view illustrating a user interface to select a desired specific content from a content list in accordance with an exemplary embodiment of the present invention.

[43]   The user interface shown in FIG. 6 is identified with Arabic numerals 1 to 9 on an upper right part of each program name of the grouped programs. However, positions of the numbers need not be fixed. They may be positioned on the upper right part of the name as in the present embodiment, or the position thereof may be changed according to a configuration of the user interface. At this time, the numbers correspond to the number keys arranged on a remote control device. Accordingly, when the user clicks a specific number using the remote control device, a program corresponding to the clicked number is selected.

[44]   FIG. 7 is a view illustrating the number of times of input by a key in order to perform a broadcasting program on an EPG in accordance with an exemplary embodiment of the present invention.

[45]   The user interface shown in FIG. 7 displays 9 programs (program_1, program_2, program_3, program_6, program_7, program_8, program_11, program_12, and program_13) grouped into a block, wherein 'program_1' is highlighted as an initial state. Also, numbers 1 to 9 are displayed on the upper right part of each program name included in the block. At this time, the numbers correspond to the number keys of a remote control device.

[46]   When the user wishes to select 'program_28', navigation of the content list and selection of 'program_28' should be performed. At this time, a 4-direction key can be used in the navigation step and the number key can be used in the selection step. In FIG. 7, a user can select and execute a desired 'program_28' by clicking a down key of the 4-direction key once and then '9' of the number key. Namely, it is possible for the user to execute a desired program with only 2 key inputs. FIG. 8 is a view illustrating a user interface in accordance with a result of key input in FIG. 7.

[47]   FIG. 9 is a view illustrating the number of times of input by a key in order to see a specific picture in a picture list in accordance with an exemplary embodiment of the present invention.

[48]   A user interface shown in FIG. 9 display that 'picture_1' is highlighted as an initial state and 9 pictures (picture_1, picture_2, picture_3, picture_5, picture_6, picture_7,

picture_9, picture_10 and picture_11) are grouped into a block. Also, numbers 1 to 9 are displayed on the upper right part of each name of the pictures belonging to the block. At this time, the numbers correspond to the number keys of a remote control device.

[49]   When the user wishes to select 'picture_12', navigation of the content list and selection of 'picture_12' should be performed. At this time, a 4-direction key can be used in the navigation step and the number key can be used in the selection step. In FIG. 9, to the user can see a desired 'pictrue_12' by clicking a right direction key of the 4-direction key once and then '9' of the number key. Thus, it is possible for the user to see the desired picture with only 2 key inputs. FIG. 10 is a view illustrating a user interface in accordance with a result of key input in FIG. 9.

[50]   FIG. 11 is a view illustrating the number of times of input by a key in order to listen to a specific music in a music list in accordance with an exemplary embodiment of the present invention.

[51]   The user interface shown in FIG. 11 displays that a 'song_1.mp3' is highlighted as an initial state and 9 pieces of music (song_1.mp3, song_2.mp3, song_3.mp3, song_4.mp3, song_5.mp3, song_6.mp3, song_7.mp3, song_8.mp3, song_9.mp3) are grouped into a block. Also, numbers 1 to 9 are displayed on the right part of each name of the songs belonging to the block. At this time, the numbers correspond to the number keys of a remote control device.

[52]   When the user wishes to select a 'song_10.mp3', navigation of the contents list and selection of the 'song_10.mp3' should be performed. At this time, a 4-direction key can be used in the navigation step, and a number key can be used in the selection step. In FIG. 11, a user can play perform a desired 'song_10.mp3' by clicking a down key of the 4-direction key once and then '1' of the number key. Thus, it is possible for the user to play his desired song with only 2 key inputs. FIG. 12 is a view showing a user interface in accordance with a result of key input in FIG. 11.

Industrial   Applicability

[53]   In accordance with an exemplary embodiments of the present invention, a user can effectively locate and execute a desired content among a plurality of contents more conveniently and at a higher speed.

[54]   Although the preferred embodiments and drawings of the present invention have been disclosed for illustrative purposes, those skilled in the art appreciate that various substitutions, modifications, changes and additions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.